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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,521

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Kyle Stickle

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EXAMINER

RAHMAN, FAHMIDA

ART UNIT

PAPER NUMBER

2116

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/772,521

**Applicant(s)**

STICKLE, KYLE

**Examiner**

Fahmida Rahman

**Art Unit**

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-19 is/are rejected.
- 7) ☒ Claim(s) 5 and 20 is/are objected to.
- 8) ☒ Claim(s) 21-27 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/17/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-27 are pending.

### **Election/Restrictions**

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-20, drawn to sampling synchronous digital signal, classified in class 375, subclass 355.
- II. Claims 21-27, drawn to calculating deterministic jitter, classified in class 702, subclass 69.

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the synthesizer frequency can be programmed differently. The subcombination has separate utility such as phase adjustment of the input signal (US Patent Application Publication 2003/0086339).

During a telephone conversation with Tom Ward on 5/30/2006 a provisional election was made with traverse to prosecute the invention of group I, claims 1-20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 21-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### **Drawings**

Figure 1 and Fig 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6, 7, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Dally et al (US Patent Application Publication No. 2003/0086339).

For claim 1, Dally et al teach the following limitations:

Art Unit: 2116

An apparatus for sampling an input signal (Fig 12), wherein the apparatus receives a clock signal synchronous with the input signal, the apparatus comprising:

- a synthesizer (37) for receiving the synchronous ([0002]) clock signal (bclk), wherein the synthesizer produces a synthesized signal having a synthesized signal frequency dependent on the synchronous clock signal ([0020] and [0021]); and
- a sampling module (22) coupled to the synthesizer, wherein the sampling module samples the input signal(19) based on the synthesized signal frequency (24 interpolates phase based on synthesized frequency  $f_{UP}/f_{DN}$ . The output of 24 is used to sample the input signal).

For claim 2, Dally et al teach counter (combination of 30A and 24) sending strobe signal ("clock") to the sampling module after a predetermined count (38, 42).

For claims 6 and 7, 37B shows the processor that controls 38, which controls the count KxV and synthesizer frequency.

For claim 16, Dally et al teach the following limitations:

A method of analyzing an input signal (Fig 12) comprising:

- receiving a clock signal (bclk) synchronous with the input signal ([0002]);
- generating a synthesized signal ( $f_{UP}/f_{DN}$ ) from the clock signal (bclk), wherein the synthesized signal has a synthesized signal frequency ( $f_{UP}/f_{DN}$ ); and
- sampling the input signal (22) dependent on the synthesized signal frequency

Art Unit: 2116

For claim 17, 42 and 38 adjust the clock frequency.

For claim 18, sampling is performed after a predetermined number of count (VxK).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dally et al, in view of AAPA.

For claims 3 and 10, Dally et al do not teach the arrangement in eye diagram. Applicant admits that processor analyzing the sampling points to arrange in eye diagram exists in prior art.

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Dally et al and applicant's admission of prior art, since eye diagram is useful in the art to analyze the data and a common way to assess the integrity of the signal.

For claims 8, 15, note Fig 2 of AAPA.

Art Unit: 2116

For claim 9, Dally et al teach the following limitations: -

An apparatus for analyzing an input signal, wherein the apparatus receives a clock signal having a clock frequency synchronous with the input signal, the apparatus comprising (Fig 12):

- a synthesizer (37) for receiving the clock signal (bclk), wherein the synthesizer produces a signal having a synthesizer frequency dependent on the clock frequency ([0020] and [0021]);
- a counter (combination of 30A and 24) coupled to the synthesizer, the counter for receiving the signal and producing a strobe signal ("clock");
- a sampling module (22) coupled to the counter, the sampling module for sampling the input signal (19) upon receiving the strobe signal ("clock");

Although Dally et al couples a processor with sampling module, the processor does not arrange the sample point in a desired configuration.

AAPA teaches the following limitations:

a processor (70) coupled to the sampling module, wherein the processor analyzes a sample point from the sampling module and arranges the sample point in a desired configuration ([0008]).

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Dally et al and AAPA. One ordinary skill in the art

Art Unit: 2116

would have been motivated to include the processor to analyze sampling points, as the waveform produced by the processor is useful in many situations, such as jitter measurement.

For claim 11, 37B shows the processor.

For claim 12, Dally et al send strobe signal to the sampling module (the strobe signal for the sampling module is the clock signal from 24. Counter 30A provides necessary signal to produce the strobe signal from 24) after a predetermined count (42, 38).

For claim 13, sampling frequency clock is dependent on synthesized frequency and count made by 38 and 42.

For claim 14, 101 controls V.

Claims 4, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dally et al., in view of Owen.

For claim 4, Dally et al teach that the synthesizer frequency is the scaled version of input clock ([0077]) and depends on amount of samples per unit interval ([0066] describes that frequency difference depends on amount of samples per unit interval). However, Dally et al do not teach the  $(N/N+1)$  factor.



Owen teaches a system where frequency is divided by that factor. One ordinary skill in the art would be motivated to combine the teachings as that would provide the design choice of the user.

### **Allowable Subject Matter**

Claims 5 and 20 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2116

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman  
Examiner  
Art Unit 2116

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